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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/787,182 | 02/27/2004 | Kazuo Sugimoto | 249549US90 | 4597 |
| 22850 7590 02/04/2008 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | EXAMINER ANYIKIRE, CHIKAODILI E | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

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|------------------------------|------------------------------------|---------------------------------|--|
| Office Action Summary | Application No. 10/787,182 | Applicant(s) SUGIMOTO ET AL. | |
| | Examiner Chikaodili E. Anyikire | Art Unit 2621 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on November 13, 2007 have been fully considered but they are not persuasive. Claims 1- 14 are currently pending.
2. Claims 1-4, 7-11, and 14 rejected under 35 USC 102 (b) as being anticipated by Neff ET al. Claims 5 and 12 rejected under 35 USC 103(a) as being unpatentable over Neff et al in view of Abe. Claims 6 and 13 rejected under 35 USC 103(a) as being unpatentable over Neff et al in view of Hu.
3. The applicant fails to argue what limitations the prior art of record fails to cover in the detailed office action.

A detailed description of the newly amended claims follows.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 7-11, and 14 rejected under 35 U.S.C. 102(b) as being anticipated by Neff et al "Very Low Bit-Rate Video Coding Based on Matching Pursuits" (provided by applicant as a part of IDS filed on April 13, 2004).

As per claim 1, Neff et al disclose image encoding apparatus (Fig 1a) comprising:

conversion means for converting coding target blocks within a coding target image into conversion information (Sec III, Part D Ln 1-15);

quantization means for quantizing the conversion information and generating quantized conversion information (Sec III, Part D Ln 1-15); and

encoding means for generating compression data by encoding the quantized conversion information based on the size of blocks, and for generating a compression code used to generate the compression data (Sec III, Part B, sub-part 3 Ln 1-15),

wherein the encoding means encodes the quantized conversion information based on a plurality of sizes of the blocks, and generates the compression code corresponding to each size of the blocks, and

the block size and compression code corresponding the lowest bit rate is included in header information (Sec III, Part B, sub-part 3 Ln 26-35).

As per claim 2, Neff et al disclose an image encoding apparatus according to claim 1, further comprising dictionary storage means for storing a plurality of bases (Sec II Ln 1-3),

wherein the conversion means converts the coding target image into the conversion information including index information for specifying a basis used for decomposition of the coding target image among the plurality of bases (Sec II Ln 9-20), a coefficient by which the basis specified by the index information is multiplied (Sec II Ln 9-20), and positional information for specifying a position where a pattern made by

multiplying the basis specified by the index information by the coefficient is restored, based on a predetermined conversion rule (Sec III, Part B, sub-part 3 Ln 1-15),

the encoding means generates the compression data including the compression codes based on a predetermined compression encoding rule (Sec III, Part B, sub-part 3 Ln 1-15), and

for each block size, the encoding means executes processing in which the encoding means divides the coding target image into a plurality of blocks, extracts, for each of the plurality of blocks, the quantized conversion information the positional information of which is included in the block (Sec III, Part B, sub-part 3 and Part D), encodes, for each of the plurality of blocks, a flag for specifying existence of the quantized conversion information the positional information of which is included in the block (Sec III, Part B, sub-part 3), encodes, for each of the plurality of blocks, the number of items of quantized conversion information each of which includes the positional information included in the block (Sec III Part D Ln 1-15), converts the positional information of the quantized conversion information into inter-block positional information specifying a relative position in the block in which the positional information is included (Sec III, Part B, sub-part 3 Ln 1-15), and encodes the quantized conversion information (Sec III, Part B, sub-part 3 Ln 1-15).

As per claim 3, arguments analogous to those presented for claim 1 are applicable to claim 3.

As per claim 4, arguments analogous to those presented for claim 2 are applicable to claim 4.

As per claim 7, arguments analogous to those presented for claim 1 are applicable to claim 7.

As per claim 8, arguments analogous to those presented for claim 1 are applicable to claim 8.

As per claim 9, arguments analogous to those presented for claim 2 are applicable to claim 9.

As per claim 10, arguments analogous to those presented for claim 1 are applicable to claim 10.

As per claim 11 arguments analogous to those presented for claim 9 are applicable to claim 11

As per claim 14, arguments analogous to those presented for claim 8 are applicable to claim 14.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 5 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Neff et al "Very Low Bit-Rate Video Coding Based on Matching Pursuits" in view of Abe (US 5,805,737).

As per claim 5, Neff et al disclose an image encoding method according to claim 4, wherein

the quantization step further includes quantizing the coefficient included in the conversion information to generate the quantized conversion information including a quantized coefficient, when encoding the quantized conversion information in said processing (Sec III Part D Ln 1-15).

However, Neff et al does not explicitly teach when encoding the quantized conversion information includes extracting a minimum absolute value among absolute values of the quantized coefficients included in a plurality of items of quantized conversion information, determining a code relating to the minimum absolute value in the compression data, converting each of the quantized coefficients into a differential value between the absolute value for each of the quantized coefficients and the minimum absolute value, including the differential values in the compression code after encoding, and including a positive or negative sign for each of the quantized coefficients in the compression code after encoding.

In the same field of endeavor, Abe discloses when encoding the quantized conversion information includes extracting a minimum absolute value among absolute

values of the quantized coefficients included in a plurality of items of quantized conversion information, determining a code relating to the minimum absolute value in the compression data, converting each of the quantized coefficients into a differential value between the absolute value for each of the quantized coefficients and the minimum absolute value, including the differential values in the compression code after encoding, and including a positive or negative sign for each of the quantized coefficients in the compression code after encoding (Col 6 Ln 41-56).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify invention of Neff et al with the invention of Abe. The advantage of combining the two inventions would be to provide better coding efficiency.

As per claim 12, Neff et al disclose an image decoding method according to claim 11, wherein the quantized conversion information includes a quantized coefficient being made by quantizing the coefficient (Sec III Part D Ln 1-15).

However, Neff et al does not explicitly teach the compression data includes the compression code made by encoding a code relating to a minimum absolute value among absolute values of the quantized coefficients included in a plurality of items of quantized conversion information, differential values between the absolute values of the quantized coefficients and the minimum absolute value, and a positive or negative sign of the quantized coefficients, and

the decoding step (Fig 1b), further comprises adding the minimum absolute value to each of the differential values included in the plurality of items of quantized

conversion information generated by decoding the compression data with reference to a code relating to the minimum absolute value, and giving the positive or negative sign included in the quantized conversion information to an added value.

In the same field of endeavor, Abe discloses the compression data includes the compression code made by encoding a code relating to a minimum absolute value among absolute values of the quantized coefficients included in a plurality of items of quantized conversion information, differential values between the absolute values of the quantized coefficients and the minimum absolute value, and a positive or negative sign of the quantized coefficients, and

the decoding step (Fig 1b), further comprises adding the minimum absolute value to each of the differential values included in the plurality of items of quantized conversion information generated by decoding the compression data with reference to a code relating to the minimum absolute value, and giving the positive or negative sign included in the quantized conversion information to an added value (Col 6 Ln 41-56).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify invention of Neff et al with the invention of Abe. The advantage of combining the two inventions would be to provide better coding efficiency.

9. Claims 6 and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Neff et al "Very Low Bit-Rate Video Coding Based on Matching Pursuits" in view of Hu (US 2002/0172418).

As per claim 6, Neff et al disclose an image encoding method (Fig 1a) according to claim 4, wherein, in the encoding step (Fig 1a).

However, Neff et al does not explicitly teach the encoding means uses arithmetic coding as the predetermined compression encoding rule and executes the arithmetic coding by using a predetermined probability table being different according to size of the block.

In the same field of endeavor, the encoding means uses arithmetic coding as the predetermined compression encoding rule and executes the arithmetic coding by using a predetermined probability table being different according to size of the block (paragraph [0152]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify invention of Neff et al with the invention of Hu. The advantage of combining the two inventions would be to provide better coding efficiency.

As per claim 13, Neff et al disclose an image decoding method according to claim 11, wherein

However, Neff et al does not explicit teach the compression code included in the compression data is generated by encoding with arithmetic coding in which according to predetermined probabilities stored in a table having different values according to the size of the block used as a predetermined compression encoding rule, and

the decoding step, further comprises executing inverse arithmetic coding based on the predetermined decoding rule by using the predetermined probability table according to size of blocks into which the decoding target image is divided.

In the same field of endeavor, Hu discloses However, Neff et al does not explicit teach the compression code included in the compression data is generated by encoding with arithmetic coding in which according to predetermined probabilities stored in a table having different values according to the size of the block used as a predetermined compression encoding rule (paragraph [0152]), and

the decoding step, further comprises executing inverse arithmetic coding based on the predetermined decoding rule by using the predetermined probability table according to size of blocks into which the decoding target image is divided (paragraph [0152]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify invention of Neff et al with the invention of Abe. The advantage of combining the two inventions would be to provide better coding efficiency.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within


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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chikaodili E. Anyikire whose telephone number is (571) 270-1445. The examiner can normally be reached on Monday to Friday, 7:30 am to 5 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272 - 7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


TUBSVO
PRIMARY EXAMINER